

# Does ethnicity, gender or age of physiotherapy students affect performance in the final clinical placements? An exploratory study

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## Abstract

**Objectives** To explore demographic differences in awarded marks of the final clinical placement in a physiotherapy undergraduate programme.

**Design** Retrospective analysis of clinical placement assessment marks.

**Setting** A London university offering clinical placements throughout South East England.

**Participants** 333 physiotherapy students entering physiotherapy training between 2005 to 2009.

**Main outcome measures** Marks awarded following assessment using a clinical placement assessment form.

**Results** The mean mark (SD) for age were standard entry 71 (7.4) vs. mature entry 72 (7.99) (ns); for gender male 72 (8.45) vs. female 71 (7.21) (ns); and ethnicity White British 72 (7.71) vs. ethnic minority 70 (7.01) ( $p = 0.023$ ). No interaction effects were observed between the independent variables and only ethnicity demonstrated a statistically significant effect (mean difference (MD) 2.4% 95%CI 0.5 to 4.3,  $F = 5.24$ ,  $p = 0.023$ ).

This difference was maintained in most subcategories. Significant differences were observed for the interpersonal section (MD 2.21% 95%CI 0.14 to 4.28,  $F = 4.409$ ,  $p = 0.03$ ), the clinical reasoning section (MD 2.39% 95%CI 0.53 to 4.25,  $F = 6.37$ ,  $p = 0.012$ ) and the treatment section (MD 2.93 95%CI 1.10 to 4.83,  $F = 9.198$ ,  $p = 0.003$ ).

**Conclusions** Physiotherapy students from minority ethnic backgrounds were awarded a significantly lower mark than their white majority peers in final clinical placements, although the difference was small. Potential reasons are considered, with the strongest recommendation being for further enquiry into the potential relationship between ethnicity and success in undergraduate physiotherapy education.

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**Keywords:** Physiotherapy; Education; Clinical placements; Ethnicity; Age; Gender

## Introduction

Since 2003, widening participation in higher education has been a strategic objective of Higher Education Funding Council for England [1] supported by the Office For Fair Access [2]. This agenda has particular relevance for professions such as physiotherapy, where lack of diversity has raised concerns resulting in some to call for the profession to more appropriately reflect the general population [3]. Indeed, some physiotherapists have suggested that the lack of diversity within the workforce is a barrier to both clinical practice and service provision [4].

Physiotherapy has traditionally been a white, female profession [5,6] but this demographic is changing with the national profile of all students studying physiotherapy in the 2009/10 cohort reported as 30% male and 50% mature entrants [6,7]. 12% were from minority ethnic backgrounds [7], a leap from under 5% in 2005 [8].

Increasing diversity of the profession is welcomed, but these changes do require Higher Education Institutions (HEI) to be vigilant towards ensuring the progression and success of students from all demographic profiles [9]. Whilst some reports question if increasing diversity may present specific challenges to HEIs due to the potential for different learning needs within these groups [9], there remains limited literature and a lack of clarity as to the specific challenges this may present within physiotherapy. Examples of previous research includes the suggestion that mature students in general are effective learners, more motivated

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and achieve more academically than younger students [3]. Conversely, there is also limited data within physiotherapy suggesting achievement of a better final degree classification by standard entry students [10].

Research considering the performance of physiotherapy students based on gender, presents a decline in performance of mature male physiotherapy students when measured for aspiration, satisfaction and identity as a learner as part of a series of questionnaire studies across all three years of physiotherapy training [11]. A later study by Hammond [6] focussed on clinical placement performance alongside related academic requirements (such as reflection portfolio's) both indicated better attainment by female students (female grades 3% higher,  $p=0.001$ ). There was also a significant increase in the number of male students failing clinical placements in comparison to their female counterparts (13% male vs. 2% female).

At present, there is no literature considering physiotherapy students in the UK and the potential relationship between ethnicity and performance. American literature suggests the potential of covert bias in the evaluation of physical therapy student's clinical performance based on ethnicity; with those from minority ethnic groups marked lower [12]. Although there are some significant limitations with this study, corroboration for these findings is in part provided in a later study by Clouten *et al.* [13], who report that a small but significant number of physical therapy clinical instructors in the USA expect students from majority white backgrounds to outperform their minority ethnic peers. They further present data which indicates that minority ethnic students are scored lower in areas of communication ( $p=0.0001$ ) and interpersonal skills ( $p=0.001$ ) although other areas such as critical thinking and problem solving were not deemed to be different. Academically, it is also suggested that there is a difference, with Utzman *et al.* [14] reporting a 200% increase in odds for students from non-white ethnic groups to have academic difficulty and subsequently fail their registration exams. This finding was independent of academic admission criteria although other potential confounding factors such as socio-economic status were not considered.

The literature presented suggests that it is both appropriate and necessary to explore the potential relationship between demographic profile and success within physiotherapy programmes within the UK, with some emphasis on clinical placements as a potential site of difference. The aim of this study was to determine if there is a relationship between age at entry (mature  $\geq 21$ , standard entry  $< 21$ ), gender and ethnicity and the marks awarded in the final clinical placement block.

## Methods

A retrospective analysis of the final clinical placement module was conducted for all graduating physiotherapy students in the 2005 to 2009 cohorts in one London based

university. Data from each CAR form for every student was tabulated alongside anonymised demographic data including age, gender and ethnicity. All data were checked by two independent researchers for accuracy.

These five cohorts were selected as they equate to the period of a validated programme which was stable in content and assessment for the study period. The final clinical placement module was chosen as the principle measure of analysis as this is the culmination of the physiotherapy degree programme and represents most closely students' capacity to perform as clinical therapists. The two clinical placements which form this module are the only two clinical placements which are not associated with academic work and therefore give the truest reflection of clinical performance. Marks awarded were explored in relation to age (mature  $\geq 21$ , standard entry  $< 21$ ), gender, and ethnicity. Age categorisation was considered at the point of entry to the physiotherapy programme and both gender and ethnicity were self-identified categories. Due to the small numbers within ethnic categories identified, ethnicity was later grouped to two; White British and minority ethnic backgrounds.

A standardised clinical assessment form (CAR form) was used in the assessment of all students. The detailed structure of the assessment form is reported by Hammond [6]. Each student is required to achieve a minimum pass mark of 40% in four areas (interpersonal skills, professionalism, treatment and clinical reasoning) resulting in a summative award with compulsory (pass/fail) assessment in the areas of safety, ethical practice and professional conduct.

Advice was sought from the School of Health Sciences and Social Care Ethics Committee and the University data protection team and it was agreed that because this was anonymised data routinely collected, no ethical approval was required. The compiled data were held on password protected computers only accessible by the research team.

## Analysis

All data were normally distributed. A univariate ANOVA was performed using the total placement mark as the dependent variable with the following 3 independent variables: gender (2 levels male/female), age (2 levels  $< 21/\geq 21$ ), ethnicity (2 levels White British/minority ethnic). Data were analysed through Statistical Package for the Social Sciences version 18 (SPSS IBM Corporation, NY, USA).

## Results

Data for 333 students were included. This indicates the total number of students who passed these clinical placements. Over the study period (cohort groups 2005 to 2009) eight students (5 female, 2 mature, 6 minority ethnic) did not pass one part of the clinical placements and they were removed from the analysis because it was incomplete data.

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